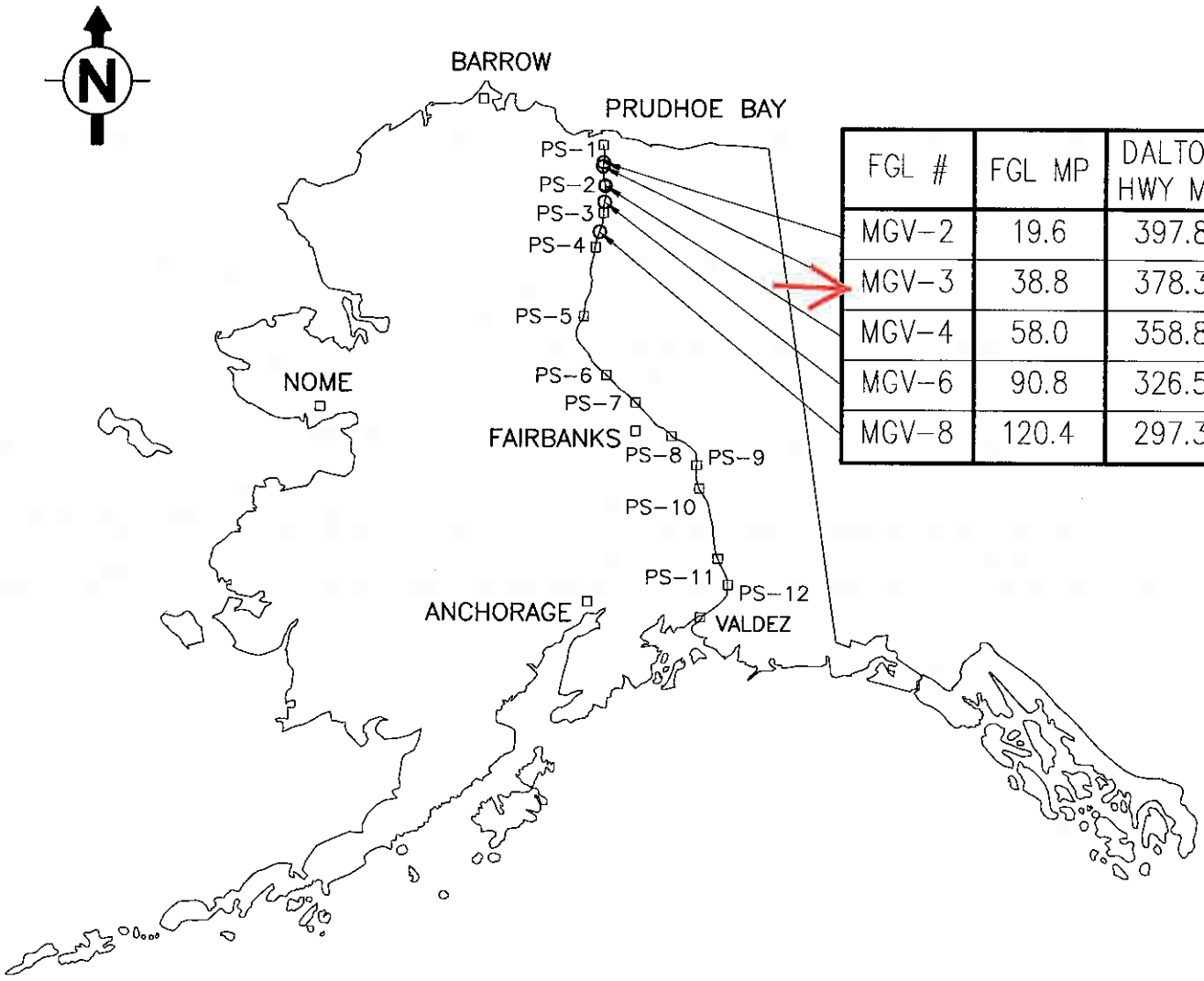


FGL #	FGL MP	DALTON HWY MP
MGV-2	19.6	397.8
MGV-3	38.8	378.3
MGV-4	58.0	358.8
MGV-6	90.8	326.5
MGV-8	120.4	297.3

SEE SITE SPECIFIC PERMIT PLATE FOR INDIVIDUAL LOCATION INFORMATION.

ALASKA VICINITY MAP

PROPERTY OWNER: STATE OF ALASKA, USA			ALYESKA PIPELINE SERVICE CO.
F838 REPLACE FUEL GAS LINE VALVES			TRANS ALASKA PIPELINE SYSTEM
			DATE: 02-01-16 / A-15-F838-C1
REV. 0	DWN. MMO	CKD. GSH / APPR. JFE	SCALE: NONE / SHEET _1_ OF _-_

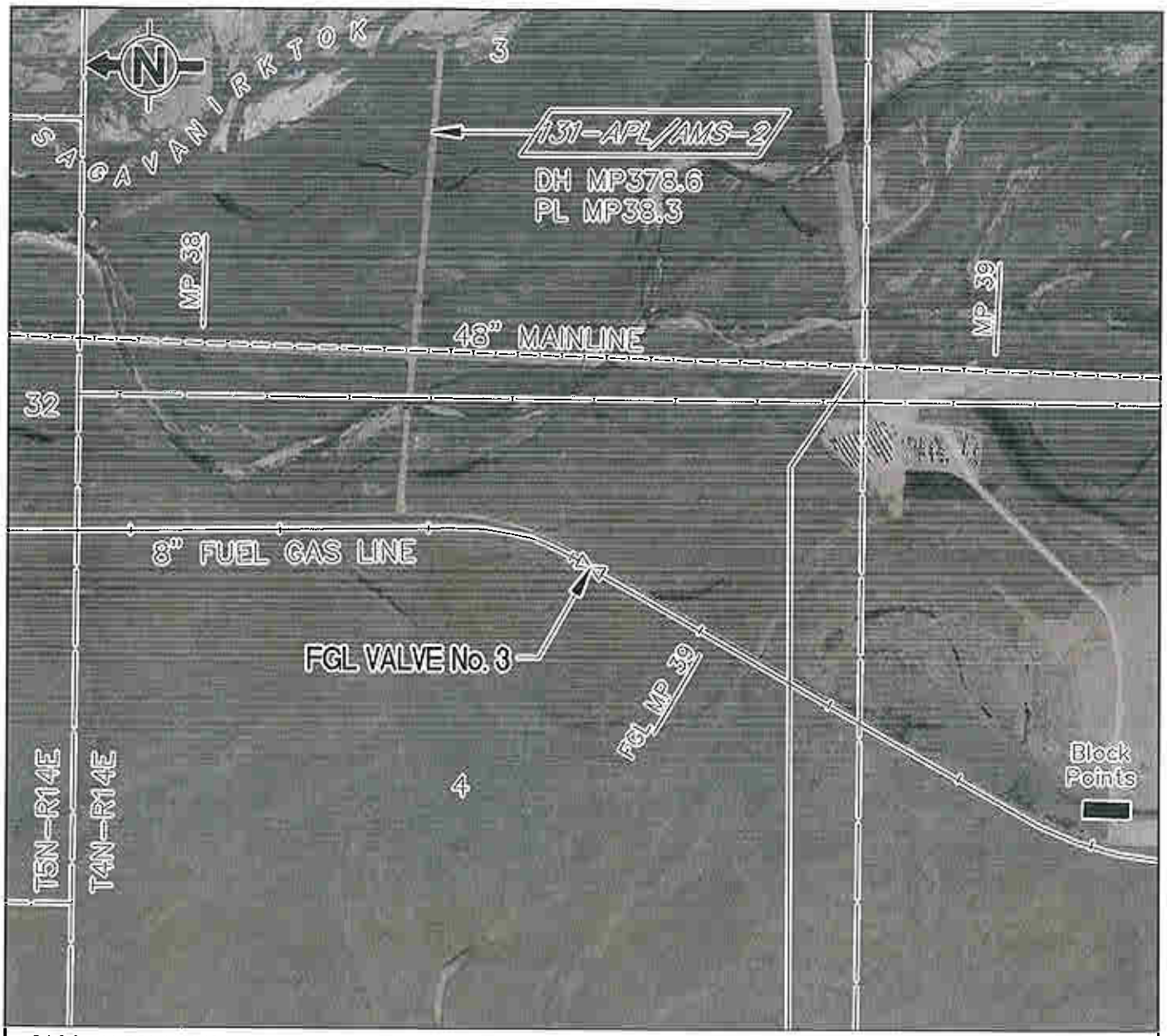
AUTOCAD DWG. DO NOT REVISE MANUALLY.

AFFECTED BY: ----

FILE DATE:03-09-16

PLOT SCALE:1=1

FILENAME: A-15-F838-C1



AFFECTED BY:

AFFECTED BY:

AFFECTED BY:

AFFECTED BY:

AFFECTED BY:

G100 ALIGNMENT SHEET 08
MERIDIAN: UMIAT, T4N R14E, SECTION 04
LATITUDE: 69° 43' 41" LONGITUDE: −148° 41' 55"

1000' 500' 0 1000' 2000'

SCALE: 1" = 1000'

PLAN

SCALE: 1"=1000'

FOR PERMITTING PURPOSES ONLY

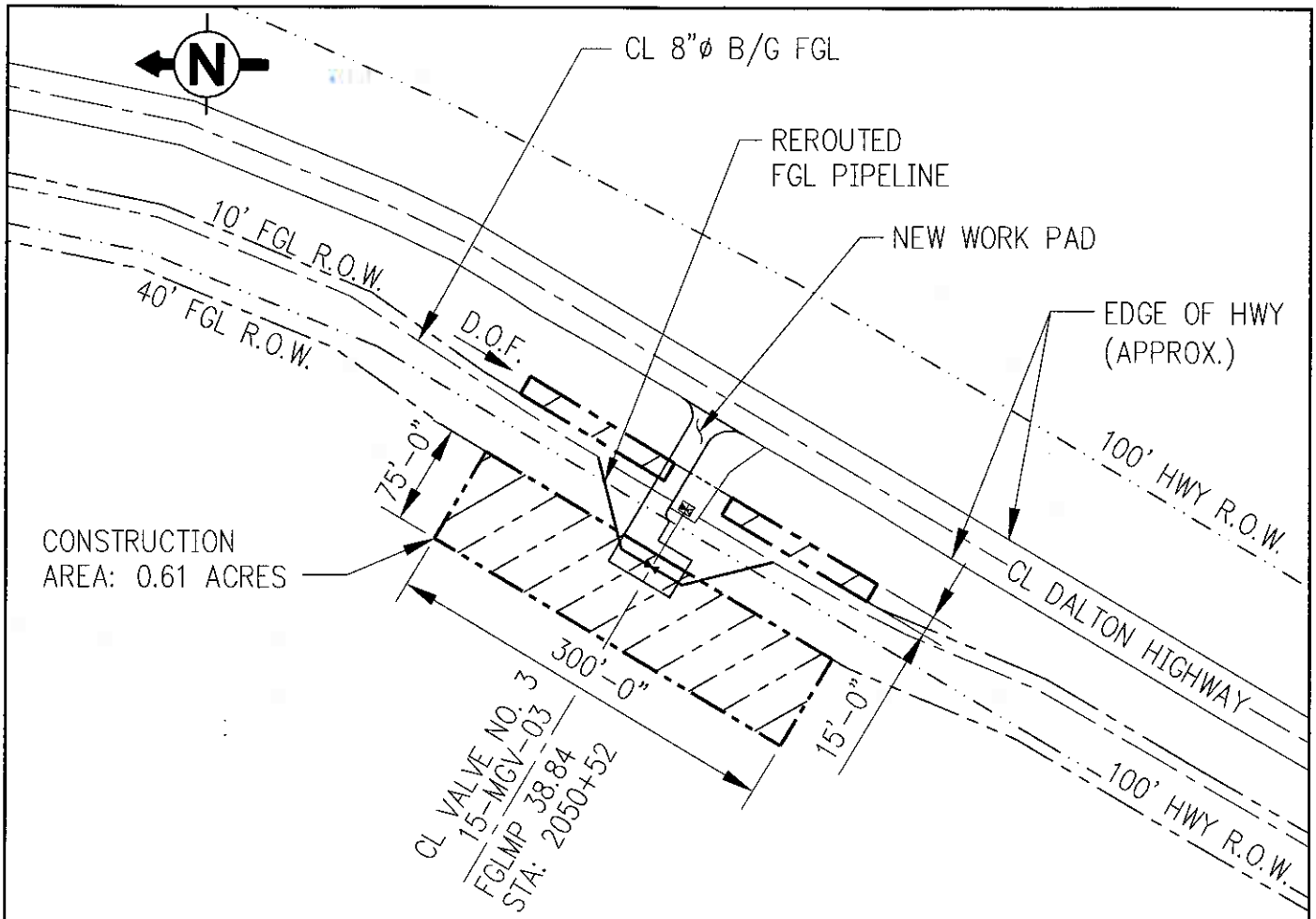
FILE DATE: 03-08-16

PLOT SCALE: 1:1

FILENAME: A-15-F838-C4

LAND OWNER: STATE OF ALASKA				ALYESKA PIPELINE SERVICE CO.	
F838 REPLACE FGL VALVES VALVE 3 FGLMP 38.84 LOCAL VACINITY MAP				TRANS ALASKA PIPELINE SYSTEM	
				DATE: 02-01-16	A-15-F838-C4
REV. 0	DWN. MMO	CKD. GSH	APPR. JFE	SCALE: 1"=1000'	SHEET 1 OF –

AUTOCAD DWG. DO NOT REVISE MANUALLY.



100' 50' 0 100' 200'

SCALE: 1" = 100'

ESTIMATED FILL QUANTITIES

	AREA (SF)	VOLUME (CY)	QTY
FGL TRENCH EXCAVATION (BACKFILLED WITH EXCAVATED SOIL)	3,200	490	2
MGV-3 ACCESS/PAD (IMPORTED GRANULAR FILL)	4,400	420	1

NOTE:

1. ACTUAL DISCHARGE DIRECTION, LOCATION, SIZE AND NUMBER OF SPLASH BOARDS TO BE FIELD-DETERMINED ACCORDING TO THE DEWATERING PLAN INSTRUCTIONS.

FOR PERMITTING PURPOSES ONLY

ALYESKA PIPELINE SERVICE CO.

TRANS ALASKA PIPELINE SYSTEM

F838 REPLACE FGL VALVES
VALVE 3 FGLMP 38.84
LAND USE PLAN

DATE: 02-01-16

A-15-F838-C5

REV. 0	DWN. MMO	CKD. GSH	APPR. JFE

SCALE: 1"=100'

SHEET 1 OF -

AUTOCAD DWG. DO NOT REVISE MANUALLY.

AFFECTED BY:

AFFECTED BY:

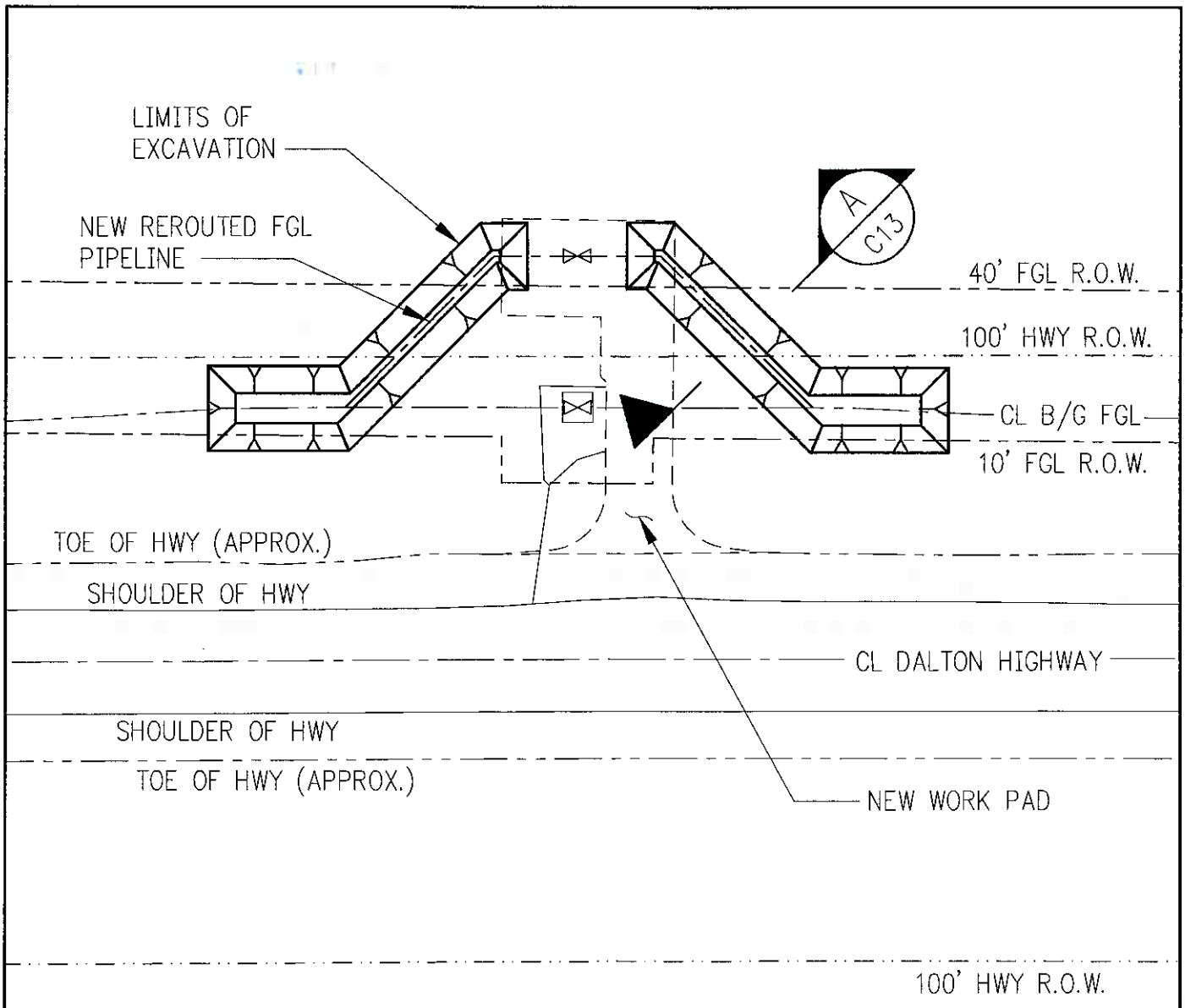
AFFECTED BY:

AFFECTED BY:

FILE DATE: 03-09-16

PLOT SCALE: 1:1

FILENAME: A-15-F838-C5



TYPICAL EXCAVATION PLAN

SCALE: N.T.S.

50' 25' 0 50' 100'

SCALE: 1" = 50'

NOTE:

1. ACTUAL DISCHARGE DIRECTION, LOCATION, SIZE AND NUMBER OF SPLASH BOARDS TO BE FIELD-DETERMINED ACCORDING TO THE DEWATERING PLAN INSTRUCTIONS.

FOR PERMITTING PURPOSES ONLY

ALYESKA PIPELINE SERVICE CO.

TRANS ALASKA PIPELINE SYSTEM

F838 REPLACE FGL VALVES
VALVES 2, 3, 4, 6, & 8
TYPICAL EXCAVATION PLAN

REV. 0	DWN. MMO	CKD. GSH	APPR. JFE

DATE: 2-13-15

SCALE: 1"=50'

A-15-F838-C12

SHEET 1 OF -

AFFECTED BY:

AFFECTED BY:

AFFECTED BY:

AFFECTED BY:

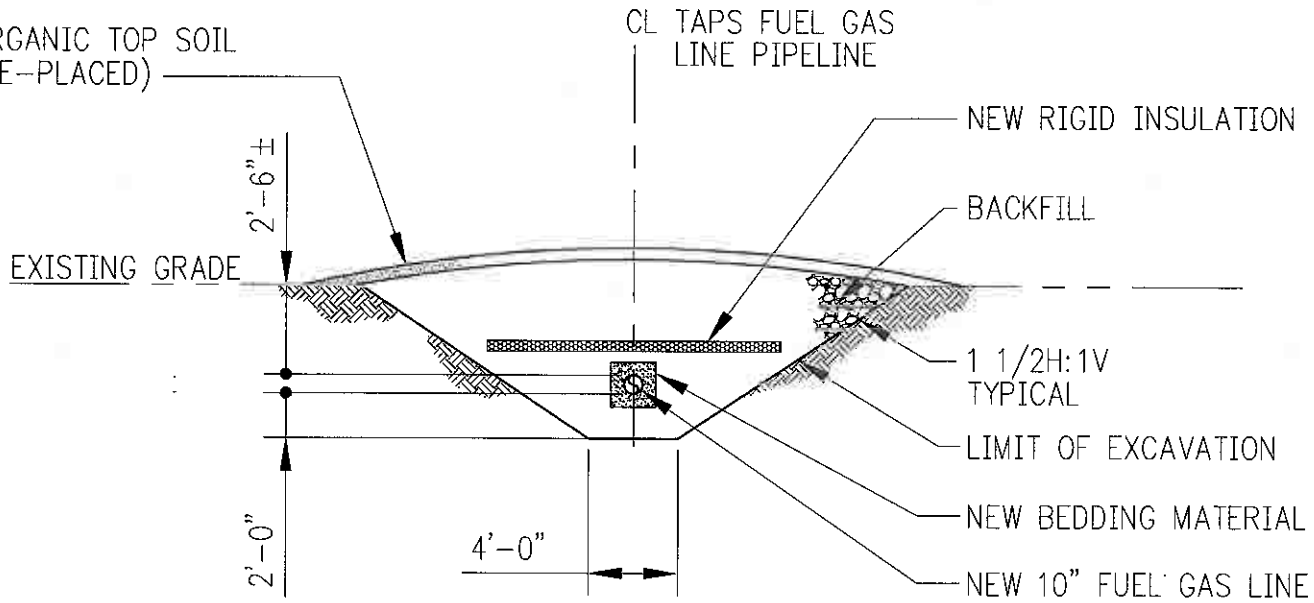
AFFECTED BY:

FILE DATE: 03-09-16

PLOT SCALE: 1:1

FILENAME: A-15-F838-C12

AUTOCAD DWG. DO NOT REVISE MANUALLY.



TYPICAL SECTION

SCALE: N.T.S.

A
C12

FOR PERMITTING PURPOSES ONLY

ALYESKA PIPELINE SERVICE CO.

TRANS ALASKA PIPELINE SYSTEM

F838 REPLACE FGL VALVES
VALVES 2, 3, 4, 6, & 8
TYPICAL EXCAVATION SECTIONS

REV. 0	DWN. MMO	CKD. GSH	APPR. JFE

DATE: 02-01-16

SCALE: N.T.S.

A-15-F838-C13

SHEET 1 OF -

AUTOCAD DWG. DO NOT REVISE MANUALLY.

AFFECTED BY:

AFFECTED BY:

AFFECTED BY:

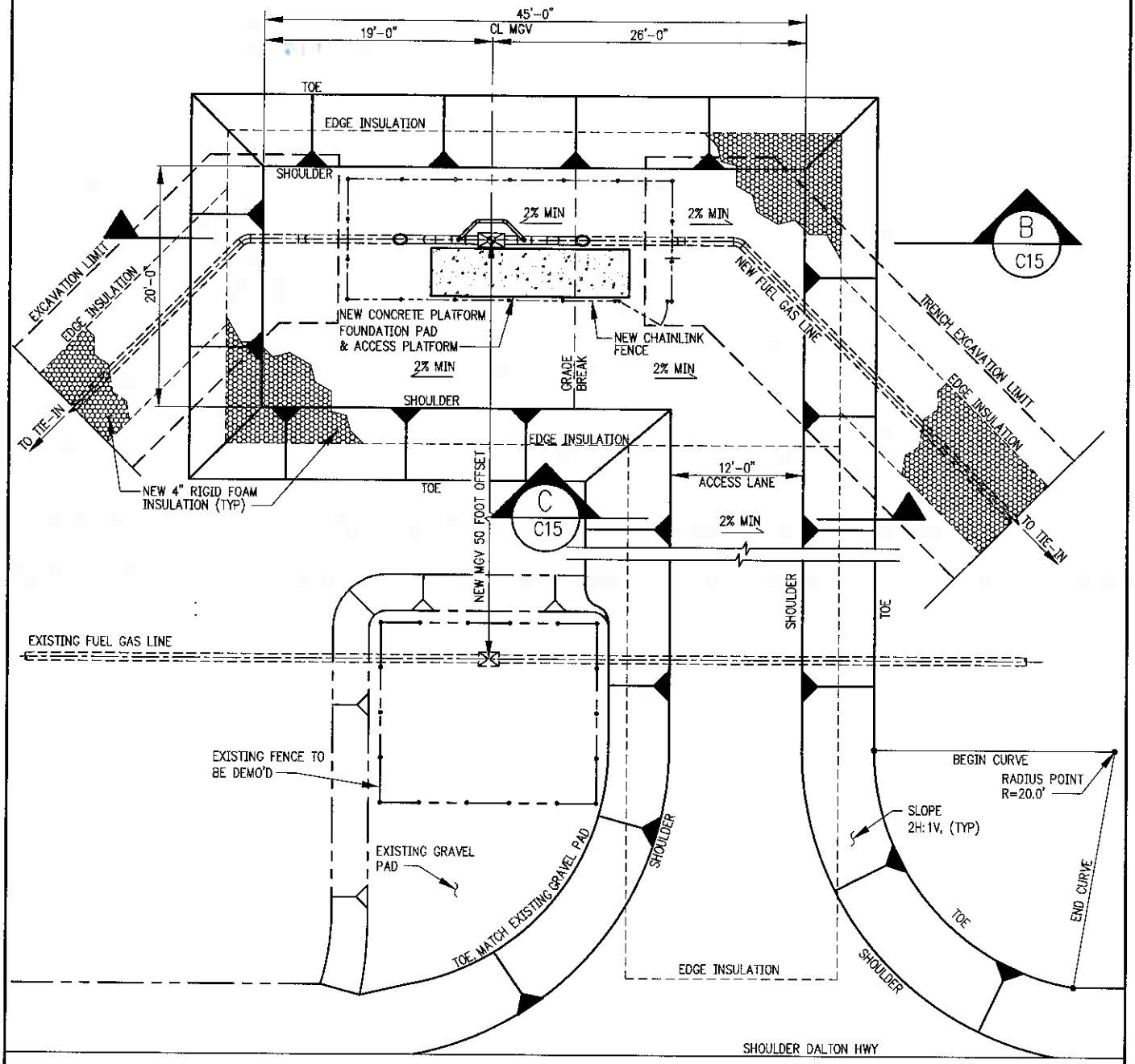
AFFECTED BY:

AFFECTED BY:

FILE DATE: 03-09-16

PLOT SCALE: 1:1

FILENAME: A-15-F838-C13



TYPICAL WORK PAD PLAN

SCALE: N.T.S.

NOTE:

1. DIMENSIONS OF NEW WORK PAD MAY VARY FROM SITE TO SITE DEPENDING ON EXISTING TERRAIN AND NEW PIPING ARRANGEMENT.

FOR PERMITTING PURPOSES ONLY

F838 REPLACE FGL VALVES VALVE 2, 3, 4, 6 & 8 WORK PAD EXPANSION PLAN	ALYESKA PIPELINE SERVICE CO. TRANS ALASKA PIPELINE SYSTEM
REV. 0 | DWN. MMO | CKD. GSH | APPR. JFE	DATE: 02-01-16 | A-15-F838-C14 SCALE: N.T.S. | SHEET 1 OF -

AUTOCAD DWG. DO NOT REVISE MANUALLY.

AFFECTED BY:

AFFECTED BY:

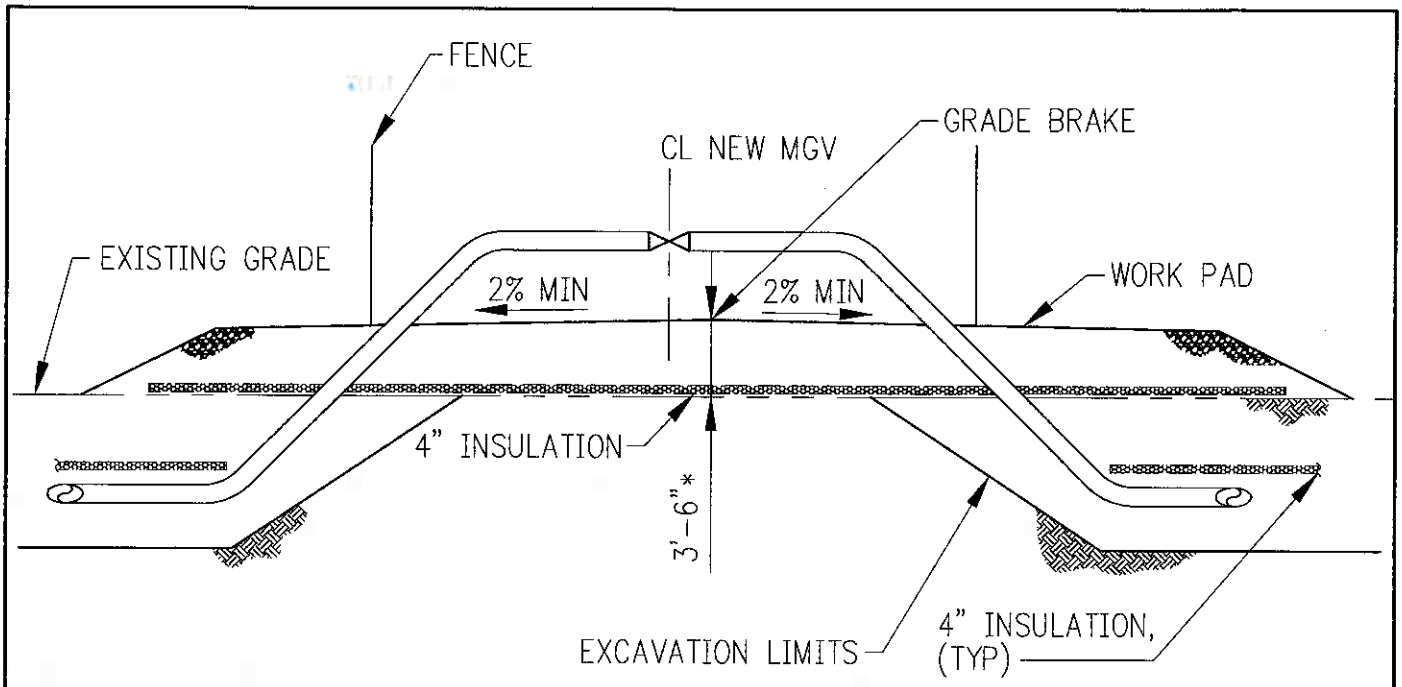
AFFECTED BY:

AFFECTED BY:

FILE DATE: 03-09-16

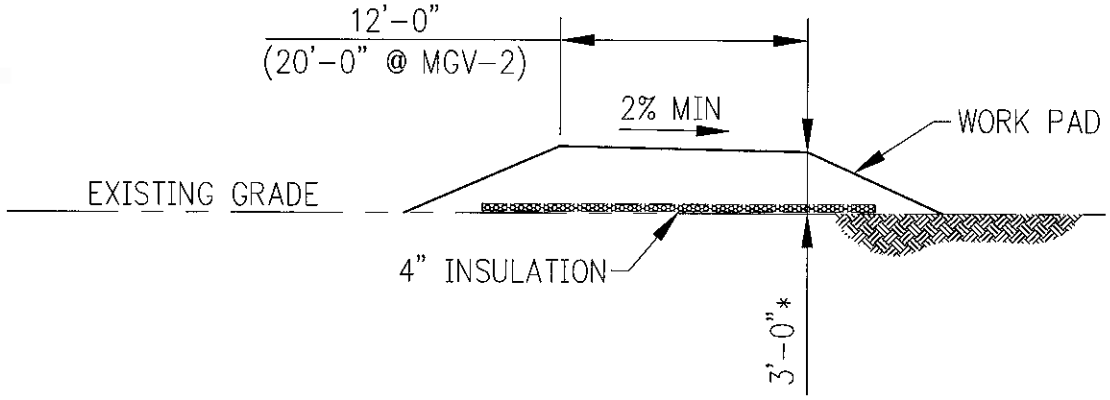
PLOT SCALE: 1:1

FILENAME: A-15-F838-C14



TYPICAL SECTION B / C14

SCALE: N.T.S.



TYPICAL SECTION C / C14

SCALE: N.T.S.

* TYPICAL FOR ALL VALVE SITES EXCEPT MGV-2, (SEE A-15-F838-C3)

NOTES:

1. DIMENSIONS OF NEW WORK PAD MAY VARY FROM SITE TO SITE DEPENDING ON EXISTING TERRAIN AND NEW PIPING ARRANGEMENT.
2. 2H:1V WORK PAD SIDE SLOPES, TYP.

FOR PERMITTING PURPOSES ONLY

ALYESKA PIPELINE SERVICE CO.

TRANS ALASKA PIPELINE SYSTEM

F838 REPLACE FGL VALVES
VALVE 2, 3, 4, 6 & 8
WORK PAD SECTIONS

DATE: 02-01-16

A-15-F838-C15

SCALE: N.T.S.

SHEET 1 OF –

REV.	DWN.	CKD.	APPR.
0	MMO	GSH	JFE

AUTOCAD DWG. DO NOT REVISE MANUALLY.

AFFECTED BY:

AFFECTED BY:

AFFECTED BY:

AFFECTED BY:

FILE DATE: 03-09-16

PLOT SCALE: 1:1

FILENAME: A-15-F838-C15

Trans Alaska Pipeline System
Replace Fuel Gas Line Valves 2, 3, 4, 6 & 8 (F838)
Adjacent to the Dalton Highway Between Pump Stations 1 and 4.
Alyeska Pipeline Service Company - Permit Narrative (March, 2016)

Project Purpose

Project F838 will replace five of the existing Alyeska Pipeline Service Company's fuel gas line (FGL) mainline gate valve (MGV) sets. The purpose of the project is to replace existing below ground valve sets with above ground valve sets and off-set them further from the highway to ensure adequate distance from the highway to prevent vehicular damage and to preserve the long term integrity of the new pipe and valve set being installed.

Location

The project sites are located immediately adjacent to the Dalton Highway and the following number of miles south of Pump Station 1 on the Trans Alaska Pipeline System:

a. MGV-2, FGL MP 19.6 (Dalton Hwy MP 397.8)
b. MGV-3, FGL MP 38.8 (Dalton Hwy MP 378.3)
c. MGV-4, FGL MP 58.0 (Dalton Hwy MP 358.8)
d. MGV-6, FGL MP 90.8 (Dalton Hwy MP 326.5)
e. MGV-8, FGL MP 120.4 (Dalton Hwy MP 297.3)

Work Description

The MGV 2, 3, 6 and 8 sites will require two lengths of trenching for installing stopples and the new piping. Because of the connecting Pump Station 2 piping, the MGV-4 site will have three stopple excavations, which are directly over the existing FGL. The excavations for stopple equipment and pipeline splicing (approximately fifty feet long) and for installing new connecting piping to each side of the new valves (approximately seventy-five feet long) will vary slightly in dimension due to terrain and existing piping configuration and be typical TAPS fuel gas line excavations extending below the pipe for purposes of welding. They will remain open until the splicing and pipe recoating is complete.

At each relocated MGV, clean gravel material will be used to construct the required access work pads. The pads will be level with the elevation of the highway which should correlate to 3 to 4 feet above the grade level of the surrounding tundra except at MGV-2 which will be approximately 10 feet above tundra. Steel platforms and stairs supported on concrete pads will provide personnel access for valve operations. Chain-link fencing will be installed around each valve according to industry standard and pipeline safety regulations.

Each out-of-service valve and its bypass piping will be removed. In order to minimize disturbance to the ground surface and highway, approximately 100 feet of out-of-service piping at each valve site will be left in-place. Any debris and scale will be cleared from the pipe after the stopples have been installed at all locations. After the out-of-service segments have been severed, the in-place piping will be purged of residual gas, and the ends welded closed.

Backhoes, pick-up trucks, boom-trucks/cranes, and ancillary equipment (e.g. welding skids, heaters, light plants) common to Alyeska Pipeline excavations will be used. Tundra mats will be used by the trenching equipment. Traffic control, comprising signs, flaggers, lane closures, barriers (Jersey Barricades) and other contractor designed traffic control plans, will be implemented.

Environmental Considerations and Mitigation

Adjacent to the highway and TAPS work pads, wetland plant communities predominate of the lowland tundra variety which includes mosses, lichens, herbs and low shrubs. The soils in this area consist of organic silt with some sand, gravel mixed with sand, numerous cobbles and scattered boulders.

The excavated trench material will be temporarily stockpiled on mats as needed to protect the natural ground surface, with the vegetation and organic soils stored separately from the gravel and silt, and then be used to backfill the excavations after the piping is installed and workpad fill has been completed. The pad expansions are situated to overlap and utilize the gravel embankments at the existing valves. When the project is complete, the disturbed areas will be restored approximating the original grade and drainage patterns and any slopes will be stabilized in accordance with TAPS manual MR-48, section 23 (Erosion Control). Heavy equipment travel will be confined to existing TAPS work pad, the new pad expansions and tundra mats. There is very minor loss in the area of waters of the U.S. in an area abundant in such, and no additional mitigation is planned.

Schedule

The field implementation in 2016 is planned to begin in April of 2016 and be completed in 2017.